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EXAMINER
EINSMANN, JULIET CAROLINE

ART UNIT	PAPER NUMBER
1634	17

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/747,391	CHOW ET AL.	
	Examiner	Art Unit	
	Juliet C Einsmann	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 August 2002 and 05 November 2002* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) *6-8* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 9-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. This action is written in response to applicant's correspondence submitted 11/5/02, paper number 17. Claim 11 has been amended and claims 16-28 have been cancelled. Claims 6-9 are withdrawn from prosecution as being drawn to a non-elected invention. Claims 1-15 are pending, and claims 1-5 and 10-15 are examined herein. Applicant's amendments and arguments have been thoroughly reviewed, but are not fully persuasive for the reasons that follow. Any rejections not reiterated in this action have been withdrawn. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

This action is FINAL.

Specification

2. Applicant's amendments to the specification and sequence listing filed 8/20/02 have been entered and are persuasive to overcome the objections of record.

Claim Rejections - 35 USC § 112

3. The rejection of claim 11 under 112 2nd paragraph is withdrawn over the teaching of the specification which demonstrate the use of SEQ ID NO: 277 as a capture probe in Example 3 where SEQ ID NO: 277 is used as an immobilized primer paired with another DR specific primer.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 3, 4, 10, 14, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Kaneshige *et al.* (MHC & IRS, Supplement to Vol. 1, 1994, pages 159-164).

Kaneshige *et al.* teach a method for identifying an HLA genotype of a subject, the method comprising :

(a) obtaining a sample comprising a template nucleic acid from said subject (p. 159);

(b) amplifying said template nucleic acid with a plurality of HLA allele-specific forward primers and HLA allele-specific reverse primers to form amplification products, wherein said forward primers or reverse primers comprise a detectable label (p. 159);

(c) hybridizing said amplification products with a plurality of HLA locus-specific capture oligonucleotides immobilized on a solid phase to form a plurality of detectable complexes (p. 159-160); and

(d) detecting said detectable complexes to identify said HLA genotype of said subject (p. 159-160).

In the method of Kaneshige *et al.*, the template nucleic acid is genomic DNA isolated from blood samples (p. 159), the HLA genotype is a class II genotype, and the detectable label is the binding protein biotin. This rejection applies to claim 15 because claim 15 further limits the fluorescent moiety recited in claim 14, but claim 15 does not require that the detectable label be a fluorescent moiety.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 2, 3, 4, 5, 10, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nevinny-Stickel *et al.* (European Journal of Immunogenetics (1993 Oct) 20(5)419-427) in view of Kaneshige *et al.*

Nevinny-Stickel *et al.* teach a method for identifying an HLA genotype of a subject, the method comprising :

(a) obtaining a sample comprising a template nucleic acid from said subject (p. 421);

(b) amplifying said template nucleic acid with a plurality of HLA allele-specific forward primers and HLA allele-specific reverse primers to form detectably labeled amplification products (p. 421);

(c) hybridizing said amplification products with a plurality of HLA locus-specific capture oligonucleotides immobilized on a solid phase to form a plurality of detectable complexes (p. 421); and

(d) immobilizing said detectable complexes on a solid phase (p. 421); and

(e) detecting said detectable complexes to identify said HLA genotype of said subject (p. 421).

Nevinny-Stickel *et al.* teach samples wherein the template nucleic acid is isolated from blood (p. 421). In the method of Nevinny-Stickel *et al.*, the template nucleic acid is genomic DNA, the solid phase is a microtiter plate, the HLA genotype is a class II genotype, and the detectable label is the binding protein digoxigenin. This rejection applies to claim 15 because claim 15 further limits the fluorescent moiety recited in claim 14, but claim 15 does not require that the detectable label be a fluorescent moiety.

The specification defines an "HLA-allele specific primer" as an oligonucleotide that hybridizes to nucleic acid variations that define or partially define that particular HLA allele. The primers used by Nevinny-Stickel *et al.* are considered to be within the scope of this definition because they are specific to the HLA-DRB locus, thus they hybridize to variations in HLA genes that define the alleles as being DRB alleles.

Nevinny-Stickel *et al.* do not teach methods in which the forward primers or reverse primers comprise a detectable label.

However, methods for labeling amplification products using primers that comprise a detectable label were routine in the art at the time the invention was made. For example, Kanshige *et al.* teach methods for amplification of genomic DNA from blood samples that utilized primers comprising the detectable label biotin (p. 159, Table 1). It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have substituted labeled primers for the labeled DIG-11-dUTP taught by Nevinny-Stickel *et al.* The ordinary practitioner would have been motivated to make such a modification in order to have

provided an alternative method for labeling the amplification products utilized in the methods taught by Nevinny-Stickel *et al.*

9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kaneshige *et al.* in view of Allen *et al.* and further in view of Erlich *et al.* (European Journal of Immunogenetics (1991), 18, 33-55).

Applicant elected for prosecution in claim 11 the primer pair consisting of SEQ ID NO: 192 and SEQ ID NO: 222.

Kaneshige *et al.* teach a method for identifying an HLA genotype of a subject, the method comprising :

(a) obtaining a sample comprising a template nucleic acid from said subject (p. 159);

(b) amplifying said template nucleic acid with a plurality of HLA allele-specific forward primers and HLA allele-specific reverse primers to form amplification products, wherein said forward primers or reverse primers comprise a detectable label (p. 159);

(c) hybridizing said amplification products with a plurality of HLA locus-specific capture oligonucleotides immobilized on a solid phase to form a plurality of detectable complexes (p. 159-160); and

(d) detecting said detectable complexes to identify said HLA genotype of said subject (p. 159-160).

Primer R86A taught by Kaneshige *et al.* comprises SEQ ID NO: 222. The primer taught by Kaneshige *et al.* differs from instant SEQ ID NO: 222 because it has an additional nucleotide at the 5' end of the primer.

Kaneshige *et al.* do not teach a primer consisting of SEQ ID NO: 222, nor do they teach a primer consisting of SEQ ID NO: 192.

Allen *et al.* teach methods which utilize HLA allele specific primers. Primer UG 116 taught by Allen *et al.* comprises instant SEQ ID NO: 192. The primer taught by Allen *et al.* differs from SEQ ID NO: 192 because it has an additional nucleotide at the 5' end and two additional nucleotides at the 3' end.

Erlich *et al.* provide an alignment of the nucleotide sequences of DRB1 HLA class II alleles. Instant SEQ ID NO: 192 is contained within the sequences disclosed for alleles 1501, 1502, 1601, and 1602 (p. 48, beginning with the third nucleotides in these sequences). Instant SEQ ID NO: 222 is the complement of a portion of the sequences disclosed for alleles 1601 and 1602 (p. 50, second nucleotide of codon 85 through the second nucleotide of codon 92). The nucleotides that are added to SEQ ID NO: 192 and SEQ ID NO: 222 in the teachings of Kaneshige *et al.* and Allen *et al.* are nucleotides that are conserved within the respective alleles that these primers are directed towards. For example, the additional one nucleotide added onto the 5' end of SEQ ID NO: 222 is conserved throughout all HLA DRB1 alleles disclosed by Erlich *et al.* The additional nucleotides that are in the primer taught by Allen *et al.* are conserved within the four alleles that SEQ ID NO: 192 is contained within.

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have used the primer taught by Allen *et al.* in the methods taught by Kaneshige *et al.* The ordinary practitioner would have been so motivated in order to provide an additional method for allele specific amplification of HLA alleles, as Allen *et al.* specifically teach that this primer is specific for alleles 1501-1503 and 1601-1602. The modification of the

primers in the prior art by the removal of nucleotides is a prima facie obvious modification. The removal of nucleotides from nucleic acid probes and primers is matter of routine optimization in the art, as is exemplified by the teachings of Kaneshige *et al.* who disclose the modification of oligonucleotide probes by both shortening and lengthening. Combined with the teachings of Erlich *et al.* who provide the full nucleotide sequence of the target alleles, the ordinary practitioner would have been motivated to modify the primers taught by Kanshige *et al.* and Allen *et al.* in order to provide equivalent primers for allele specific amplification of nucleic acid sequences.

10. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Erlich *et al.*

Applicant elected SEQ ID NO: 277 for prosecution in claims 11 and 12. This sequence is free of the prior art. Thus, an alternate sequence has been searched and examined.

Erlich *et al.* teach a method for identifying an HLA genotype of a subject, the method comprising :

(a) obtaining a sample comprising a template nucleic acid from said subject;

(b) amplifying said template nucleic acid with a plurality of HLA allele-specific forward primers and HLA allele-specific reverse primers to form amplification products, wherein said forward primers or reverse primers comprise a detectable label;

(c) hybridizing said amplification products with a plurality of HLA locus-specific capture oligonucleotides immobilized on a solid phase to form a plurality of detectable complexes; and

(d) detecting said detectable complexes to identify said HLA genotype of said subject (see, for example, figure 1). The capture oligonucleotide in the methods taught by Erlich *et al.* comprise a 5' poly-T sequence.

Erlich *et al.* provide an alignment of the nucleotide sequences of DRB1 HLA class II alleles, including the DQB1 alleles (p. 44-45). The capture probe instantly disclosed as SEQ ID NO: 274 is contained within HLA DQB1*0301, DQB1*0301, and DQB1*0301 (see section encoding amino acids 35-43).

It would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have selected an additional capture probe from the sequence alignment provided by Erlich *et al.*, as Erlich *et al.* teach that "Additional primers and/or probes can, of course, increase the allelic discrimination of oligonucleotide dot blot typing (p. 33)." The ordinary practitioner would have been motivated to select instant SEQ ID NO: 274 due to its specificity to the DQB1*03 alleles.

Response to Remarks

With regard to the 102(b) rejection in view of Kaneshige et al., applicant argues that Kaneshige et al. do not teach every limitation of the rejected claims because Kaneshige et al. teach hybridization of the PCR amplification product to allele-specific oligonucleotides, not to locus-specific capture oligonucleotides. Applicant states "As defined by Applicants, a locus-specific capture oligonucleotide will bind to all amplification products, and will not be able to detect single base pair allelic variation (see response, pages 5-6)." However, applicant does not cite any reference in the disclosure for this definition, and the examiner was not able to locate this definition in the specification. Instead, the disclosure at page 12, states "a locus specific

capture oligonucleotide has the ability to hybridize to some or all of the sequences that can be generated by the amplification of HLA allele sequences using HLA-specific primers." Neither the definitions in the specification nor the claims provide structural limitation that differentiates the "locus-specific capture oligonucleotides" recited in the claims from the capture oligonucleotides used by Kaneshige et al. Thus, the recitation "locus-specific capture oligonucleotides" encompasses the capture oligonucleotides used by Kaneshige et al. since these can hybridize to all or some of the sequences generated by the amplification with allele-specific primers. The interpretation of the claims that includes the oligonucleotide capture probes used by Kaneshige et al. as locus-specific capture oligonucleotides is appropriate when this phrase is given its broadest reasonable interpretation in light of the specification.

Furthermore, it is noted that the capture oligonucleotides used by Kaneshige et al. each hybridize to multiple alleles within a particular locus. For example, the DR1 oligonucleotide SRB3701 hybridizes to all of the DRB1 alleles that were present in the sample (p. 161, Table 2), thus it is a locus-specific capture oligonucleotide even within what appears to be applicant's narrowest definition of the term. Furthermore, turning to applicant's specification, the specification teaches that an HLA locus specific capture oligonucleotide "is complementary to and hybridizes to a conserved region of an HLA locus (specification page 9)." The oligonucleotides taught by Kaneshige et al. also meet this definition of locus specific capture probes because by hybridizing to more than one allele they inherently must be hybridizing to some conserved regions of the HLA locus.

Thus, the rejection under 102(b) is maintained.

With regard to the 103 rejection over Nevinney-Stickel et al. in view of Kaneshige et al., applicant argues that the primers used in amplification by Nevinney-Stickel et al. are locus-specific primers and not allele-specific primers. However, as noted in the rejection, the specification defines an "HLA-allele specific primer" as an oligonucleotide that hybridizes to nucleic acid variations that define or partially define that particular HLA allele. The primers used by Nevinny-Stickel *et al.* are considered to be within the scope of this definition because they are specific to the HLA-DRB locus, thus they hybridize to variations in HLA genes that define the alleles as being DRB alleles. Neither the definitions in the specification nor the claims provide structural limitation that differentiates the "allele-specific primers" recited in the claims from the primers oligonucleotides used by Kaneshige et al.

Applicant argues that the capture oligonucleotides used by Nevinney-Stickel et al. are allele-specific and not locus-specific. However the definition of "locus-specific capture oligonucleotides" provided in the specification encompasses the capture oligonucleotides utilized by Nevinney-Stickel because these are able to hybridize to the amplification products generated using HLA-specific primers. The specification also defines an HLA locus specific capture oligonucleotide "is complementary to and hybridizes to a conserved region of an HLA locus (specification page 9)." Many of the capture probes utilized by Nevinney-Stickel et al. hybridize to more than one DRB1 allele (see Table 1) and thus to regions that are conserved among these alleles within the DRB locus.

Applicant further states that the cited references fail to provide a motivation to combine or modify their teaching to arrive at the claimed invention but does not provide any further reasoning or support for this assertion. As noted in the rejection, the modification of Nevinney-

Stickel et al. to meet the claimed invention is merely the inclusion of a label on one of the primers used in the amplification reaction, as taught by Kaneshige et al. As noted in the rejection, the ordinary practitioner would have been motivated to make such a modification in order to have provided an alternative method for labeling the amplification products utilized in the methods taught by Nevinny-Stickel *et al.*

Applicants argue Kaneshige et al. in view of Allen et al. and Erlich et al. do not teach or suggest using allele specific primers for amplification of HLA DNA, followed by hybridization to locus-specific capture oligonucleotides as claimed. Applicant refers to previous arguments to address the teachings of Kaneshige et al. These arguments have been addressed. The disclosure of Erlich et al., however, is further useful to understand the instant interpretation of "locus-specific capture oligonucleotide." Erlich *et al.* provide an alignment of the nucleotide sequences of DRB1 HLA class II alleles, including the DQB1 alleles (p. 44-45). The locus-specific capture probe instantly disclosed as SEQ ID NO: 274 is contained within HLA DQB1*0301, DQB1*0301, and DQB1*0301 (see section encoding amino acids 35-43). This capture probe has identity with some, but not all, of the HLA DQB1 alleles within this locus. Likewise, many of the probes disclosed by Kaneshige et al. hybridize to some, if not all, of the alleles of a particular locus, and thus, they are fairly considered "locus-specific capture probes."

Applicant's further discussion of this rejection does not address the totality of the 103 rejection, but instead is a discussion of the disclosure of Erlich et al. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231

USPQ 375 (Fed. Cir. 1986). Nonetheless, these arguments are addressed. It is noted in the rejection of claim 11, the disclosure of Erlich et al. that is relied upon by the examiner is that of the full length sequences of particular HLA alleles which contain SEQ ID NO: 222 and SEQ ID NO: 192. Applicant's arguments are concerned with the overall methodology employed by Erlich et al. Applicant states that template DNA is first amplified using locus-specific primers. However, Erlich et al. specifically teach "In general, one can use either 'generic' primers.. locus specific primers... or *allele or groups specific* primers (p. 35, emphasis added)." Furthermore, in view of applicant's broad definition of "allele-specific" any of the primers utilized by Erlich et al. are allele-specific since they all would hybridize to nucleic acid variations that define or partially define that particular HLA allele. Applicant argues that Erlich et al. do not teach hybridization with locus specific probes. For reasons discussed herein with regard to Kaneshige et al. and Nevinny-Stickel et al., the probes taught by Erlich et al. are considered to be locus-specific probes within the definitions and examples provided in the specification. Furthermore, in Table 1, Erlich et al. specifically disclose that probe RH54 is a capture oligonucleotide that is specific to ALL alleles in the HLA-DQA1 locus, thus it is a locus-specific capture oligonucleotide even within what appears to be applicant's narrowest definition of the term.

Finally, applicant argues that the cited references fail to provide motivation for their combination in the practice of the claimed invention, but does not provide further reasoning for this statement. Clear motivation is provided in the rejection, which states,

> The ordinary practitioner would have been so motivated in order to provide an additional method for allele specific amplification of HLA alleles, as Allen *et al.* specifically teach that this primer is specific for alleles 1501-1503 and 1601-1602. The modification of the primers in the prior art by the removal of nucleotides is a prima facie obvious modification. The removal of nucleotides from nucleic acid probes and primers is matter of routine optimization in the art, as is exemplified by the teachings of Kaneshige *et al.*

> who disclose the modification of oligonucleotide probes by both shortening and lengthening. Combined with the teachings of Erlich *et al.* who provide the full nucleotide sequence of the target alleles, the ordinary practitioner would have been motivated to modify the primers taught by Kanshige *et al.* and Allen *et al.* in order to provide equivalent primers for allele specific amplification of nucleic acid sequences.

Thus, the rejection of claim 11 is maintained.

With regard to the rejection of claims 12 and 13 over Erlich et al., applicant states on page 9 of the response that the examiner has improperly searched an alternate sequence, SEQ ID NO: 274. However, applicant is referred to MPEP 803.02 which discusses species elections for Markush-type groups and states,

> "...should no prior art be found that anticipates or renders obvious the elected species, the search of the Markush-type claim will be extended. If prior art is then found that anticipates or renders obvious the Markush-type claim with respect to a nonelected species, the Markush-type claim shall be rejected and claims to the nonelected species held withdrawn from further consideration. The prior art search, however, will not be extended unnecessarily to cover all nonelected species."

In the instant case, the no prior art disclosing the elected species was identified, so an alternate species was selected form examination and rejected, in accordance with the guidance in the MPEP. Claims which require SEQ ID NO: 277 are allowable.

Applicant states that template DNA is first amplified using locus-specific primers. However, Erlich et al. specifically teach "In general, one can use either 'generic' primers.. locus specific primers... or *allele or groups specific* primers (p. 35, emphasis added)." Furthermore, in view of applicant's broad definition of "allele-specific" any of the primers utilized by Erlich et al. are allele-specific since they all would hybridize to nucleic acid variations that define or partially define that particular HLA allele. Applicant argues that Erlich et al. do not teach hybridization with locus specific probes. For reasons discussed herein with regard to Kaneshige

et al. and Nevinny-Stickel et al., the probes taught by Erlich et al. are considered to be locus-specific probes within the definitions and examples provided in the specification. Furthermore, in Table 1, Erlich et al. specifically disclose that probe RH54 is a capture oligonucleotide that is specific to ALL alleles in the HLA-DQA1 locus, thus it is a locus-specific capture oligonucleotide even within what appears to be applicant's narrowest definition of the term.

Applicant argues that since SEQ ID NO: 274 is not an elected sequence, the examiners rejection of claims in view of this sequence has no bearing on the patentability of the claims. Applicant is mistaken to suggest that a rejection of an embodiment within the claims has no bearing on the patentability of the claims. The rejection of claims 13 and 14 over the species SEQ ID NO: 274 has no bearing on the elected in species, which is free of the art, but it does have a bearing on the claims, which are not patentable at least for the reasons of record.

Conclusion

11. No claims are allowed.

12. Instant SEQ ID NO: 277 is free of the prior art. Claims 12 and 13 would be allowable if they were rewritten to require SEQ ID NO: 277 and to include all of the limitations of the previous claims from which they depend.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juliet C. Einsmann whose telephone number is (703) 306-5824. The examiner can normally be reached on Monday through Friday, from 9:00 AM until 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, W. Gary Jones can be reached on (703) 308-1152. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4242 and (703) 305-3014.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.

Juliet C Einsmann
Examiner
Art Unit 163434

January 23, 2003

W. Gary Jones
Supervisory Patent Examiner
Technology Center 1600